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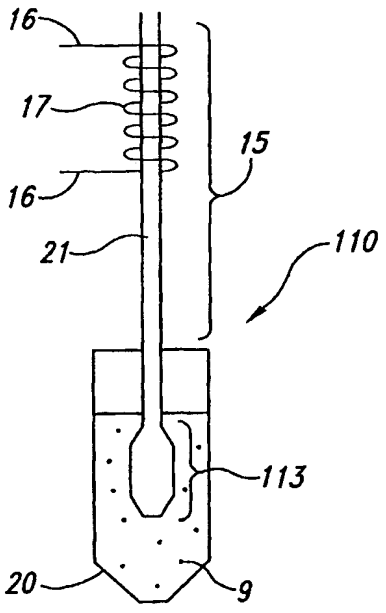
(54) Title: MAGNETIC ROD APPARATUS AND METHOD FOR MANIPULATING MAGNETIC PARTICLES FOR DETECTING ANALYTES



(57) Abstract: Disclosed herein are electromagnetic rod devices, systems and methods using the same, for manipulating magnetic particles within a fluid sample well to facilitate processing the magnetic particles for detection of analytes bound thereto. The electromagnetic rods are used to transfer magnetic particles between different sample wells in a multi-step analyte detection procedure and /or to facilitate washing of the magnetic particles within a sample well. The electromagnetic rod devices include an upper portion, and a lower portion configured as a tip or configured to engage a disposable tip sheath. Magnetic particles are alternatively engaged and disengaged with the surface of the tip or the tip sheath by turning the electromagnet on and off at selected times. The electromagnetic rod devices may optionally be configured with an actuator assembly to move the electromagnetic rod devices vertically and/or horizontally in an instrument system configured for performing biological assays.

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